



Marine Aviation Transformation

The Future is Now

NDIA Expeditionary Warfare Conference

21 October 2004



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Deputy Commandant for Aviation





Marine Aviation

Today: ***Win wars***

Today & Tomorrow: ***Transition***

Tomorrow: ***Transform***



Today

■ Winning the War



MAINTAIN & SUSTAIN



Today Tomorrow

KC-130 F/R/T

CH-46E
CH-53D

UH-1N
AH-1W

PIONEER

CH-53E

F/A-18 A+/B/C/D
AV-8B

EA-6B

VH-3/VH-60

"Old" AVLOG

"Old" MACCS
(many systems)

KC-130J/T

MV-22

UH-1Y
AH-1Z

VUAV

HLR

F-35 JSF

AEA

VXX

"NEW" MACCS

CAC2S / ASPARCS /
SLAMRAAM / G/ATOR / HELRASR



**"NEW" AVLOG
MALSP II**

STABILIZE



Today GWOT

■ OIF

- 3 HMM
- 2.0 HMLA
- 1.5 HMH
- 0.5 VMGR
- MWSG (-)
- MACG (-)
- MALS (-) (+)
- 1.0 VMU
- 1 - 2 VMA
- 1 x VMFA
- 2 x MEU ACE

■ OEF

- 0.5 HMLA
- 0.5 HMH
- MEU ACE
- ATC Det
- MALS (-)

■ CJTFHOA

- 4 CH-53E

■ Support to MEUs continue

■ UDPs will be “gapped”

- HMLA --- Slated for OIF
- HMH --- Slated for OIF

CMC Guidance (SECDEF approved)

- 7-month deployments
- Do NOT “break the force”



Today

GWOT - Assault Support ASE Upgrades

- Black Indicates Current Configuration
- Red Indicates New Configuration - Currently Funded
- Blue Indicates New Configuration - Previously Funded

	Missile Warning	Decoy Dispenser	IR Jammer	RF Warning	Other Protection	% of Non-deployed Aircraft with ASE upgrades (available for training)
Threat sophistication is increasing - ASE technology is not. Training & Tactics/Techniques/Procedures are critical.						
CH-53E	AAR-47 AAR-47v2	ALE-39 ALE-47	N/A	APR-39v1	M3M Gun, Ballistic Protection	12%
CH-46	AAR-47 AAR-47v2	ALE-39 ALE-47	ALQ-157V ALQ157A	APR-39v1	LW Armor	22%
AH-1W	AAR-47 AAR-47v2	ALE-39 ALE-47	ALQ-144A	APR-39v1 APR-39Av2	IR Suppressor Turned Exhaust	5%
UH-1N	AAR-47 AAR-47v2	ALE-39 ALE-47	ALQ-144A	APR-39Av2		17%
KC-130	AAR-47 AAR-47v2	ALE-39 ALE-47	ALQ-157(V) ALQ157A	APR-39Av1 APR-39Av2		N/A
More than \$114 Million spent on ASE!						

FY05 Congressional Support
- APR/AAR AH-1W/CH-53 - \$34M in Supplemental



Today

GWOT- TACAIR

■ AV-8B

- Litening AT
- OSCAR (JDAM capability)

■ F/A-18A+/C

- ECP-583

■ F/A-18C

- Carrier Ops

■ F/A-18D

- Litening AT
 - Wiring installed
 - Working on pod acquisition
- ATARS Solid State Recorder
"CHANGE DETECTION"

■ KC-130J

- Researching feasibility of
Litening Pod for GWOT support



Litening ISR



Today

GWOT - Impacts

- OSD “Stress on Equipment” study in progress
 - Assessing short and long-term impacts
 - Developing Courses of Action for leadership decisions
 - Depot Level Maintenance
 - Cycle time
 - Must sustain GWOT aviation requirements
 - Fatigue / stress on old airframes
 - Phasing depot level maintenance capability in theater
- NAVAIR / USMC initiative



Today

Transition

Tomorrow

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CH-53D

UH-1N
AH-1W

PIONEER

CH-53E

F/A-18 A+/B/C/D
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(many systems)

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MALSP II

"NEW" MACCS
CAC2S / ASPARCS /
SLAMRAAM / G/ATOR / HELRAS



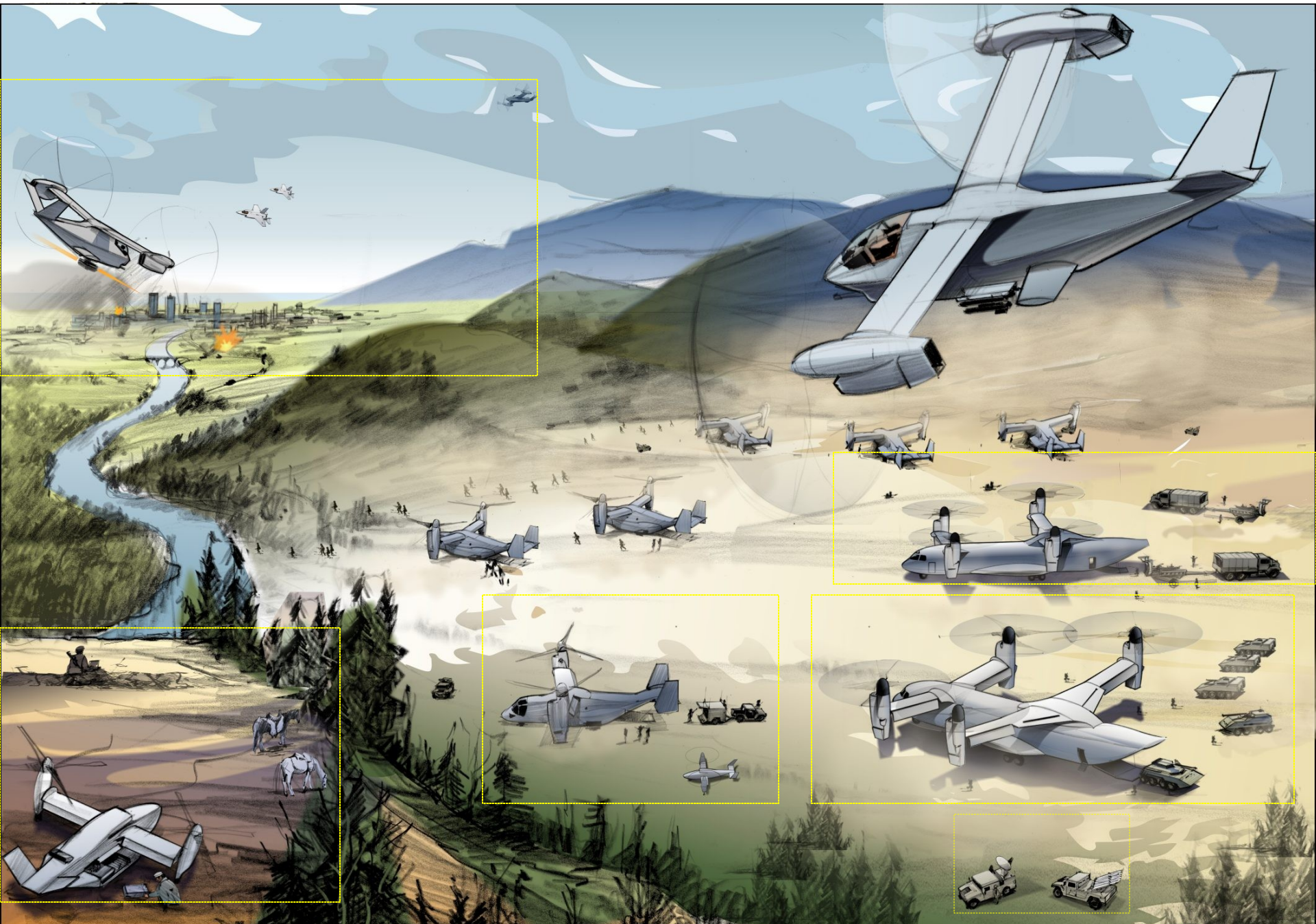
Tomorrow - From the Sea



Tomorrow - Across the Beach



Tomorrow - 200+ nm Inland





Tomorrow

This will get us there:

KC-130J



MV-22



UH-1Y



AH-1Z





Tomorrow

This will get us there:

Heavy Lift Replacement



Joint Strike Fighter



Vertical UAV



C2 & Air Defense Systems





Tomorrow

This will get us there:

■ Amphibious Assault (L Class)

■ LHA(R), Flight Zero – FY07 Ship (\$)

- “Aviation Variant” – 23 x JSF capacity

- No well-deck

■ LHA(R), Flight One – (?)

- Spiral Development
- “Transformational Platform”

■ Prepositioned Shipping: **MPF(F)**

- Key element to Sea Basing and STOM operations
- Distributed Capabilities or Family of Ships?
- SELECTIVE OFFLOAD

■ Connectors





Tomorrow SEA SHIELD





Future Aircraft

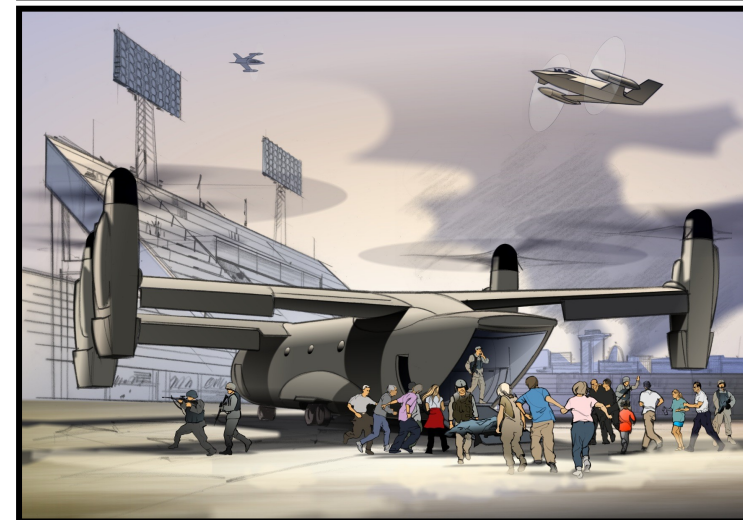
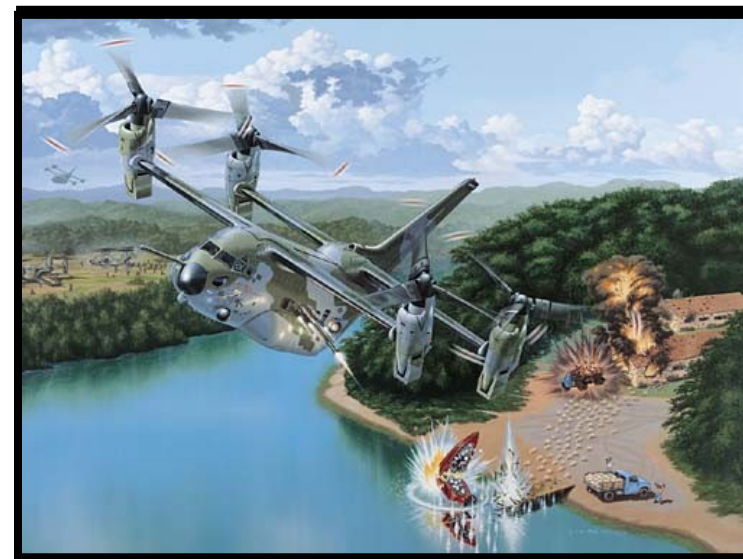
■ Joint Heavy Lift Aircraft

■ Initial Capabilities Document

- In work
- OSD(AT&L) Lead
- Joint Staff / Service input

■ JHL - Multiple Concepts

- 50K lift capacity
- Supports ALL VTOL vision
- **CONNECTOR**: from Sea Base to advanced bases

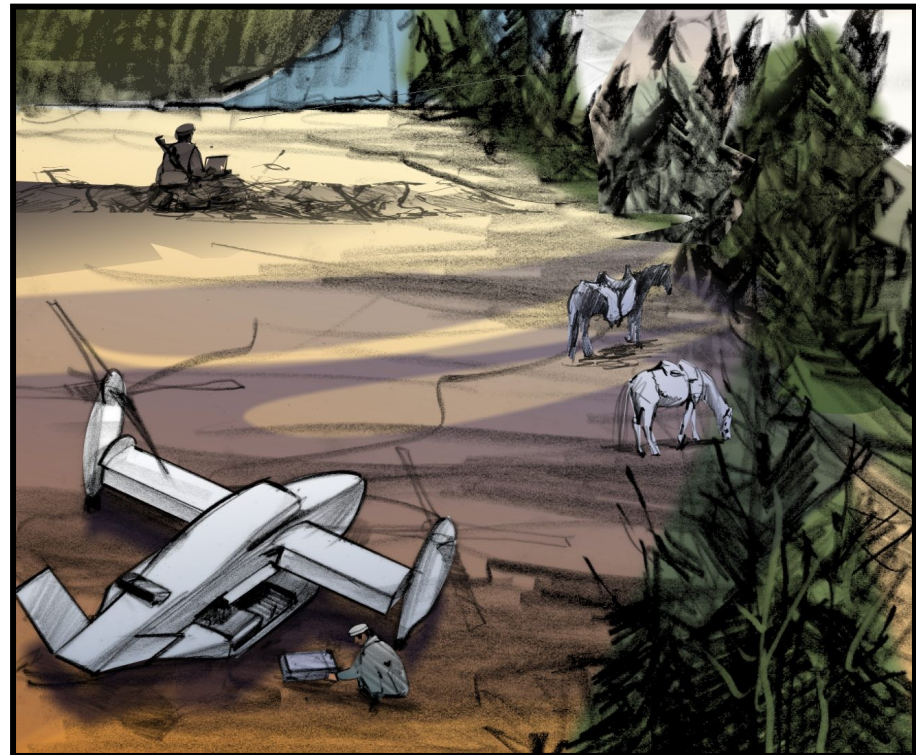
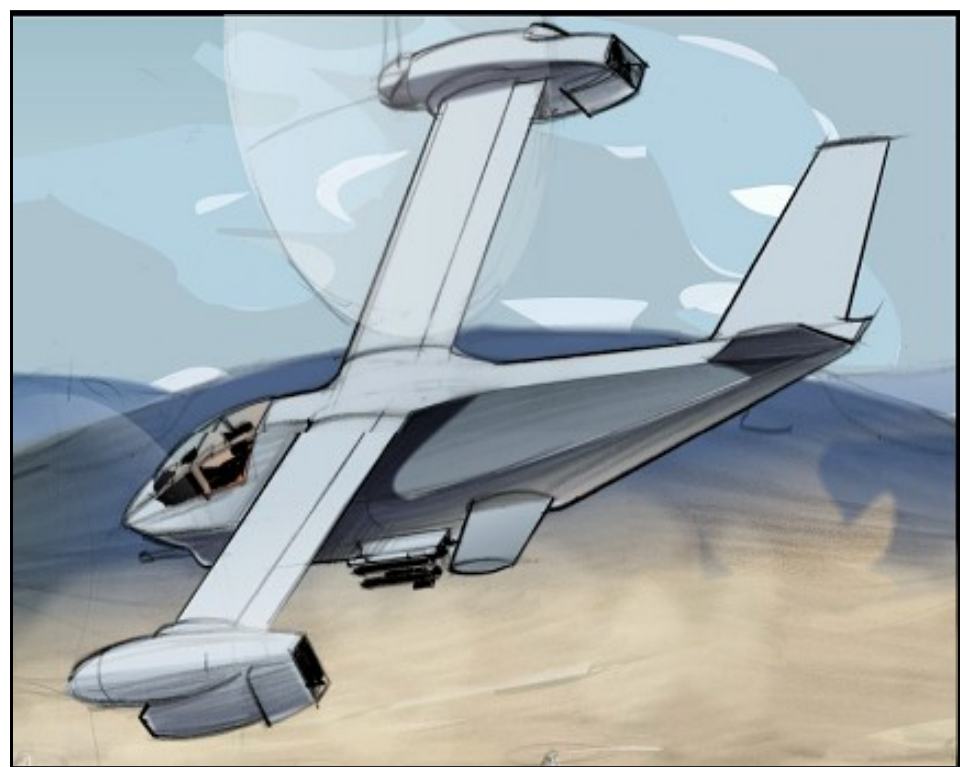




Future Aircraft

■ **V-22 Escort ?**

■ **Mule UAV**





Priorities

Tactical

Operational

Strategic



Tactical Priorities

■ **OIF/OEF Sustainment**

■ **CH-53 / UAV**

■ **NMCI / MAG TA**



Operational Priorities

■ **Maintain legacy equipment warfighting relevance**

■ **TacAir Integration**

■ **Programmatics/Transition**



Strategic Priorities

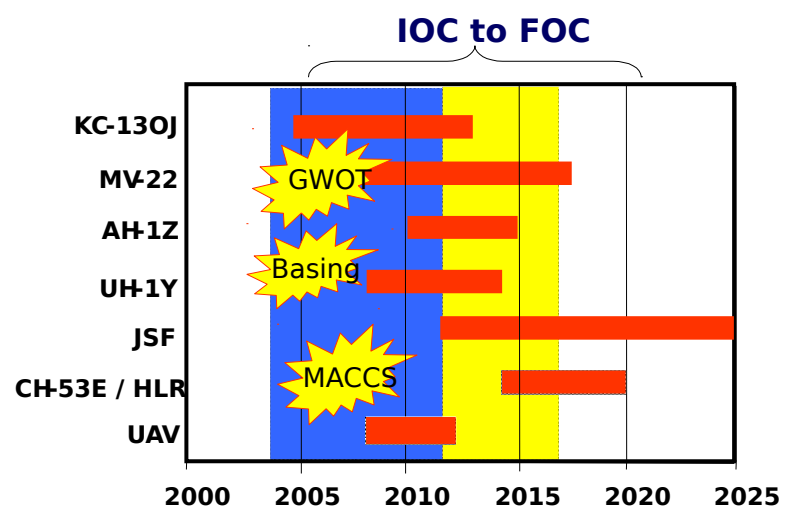
- **Mission accomplishment**
- **Welfare of our people**
- **Safety**



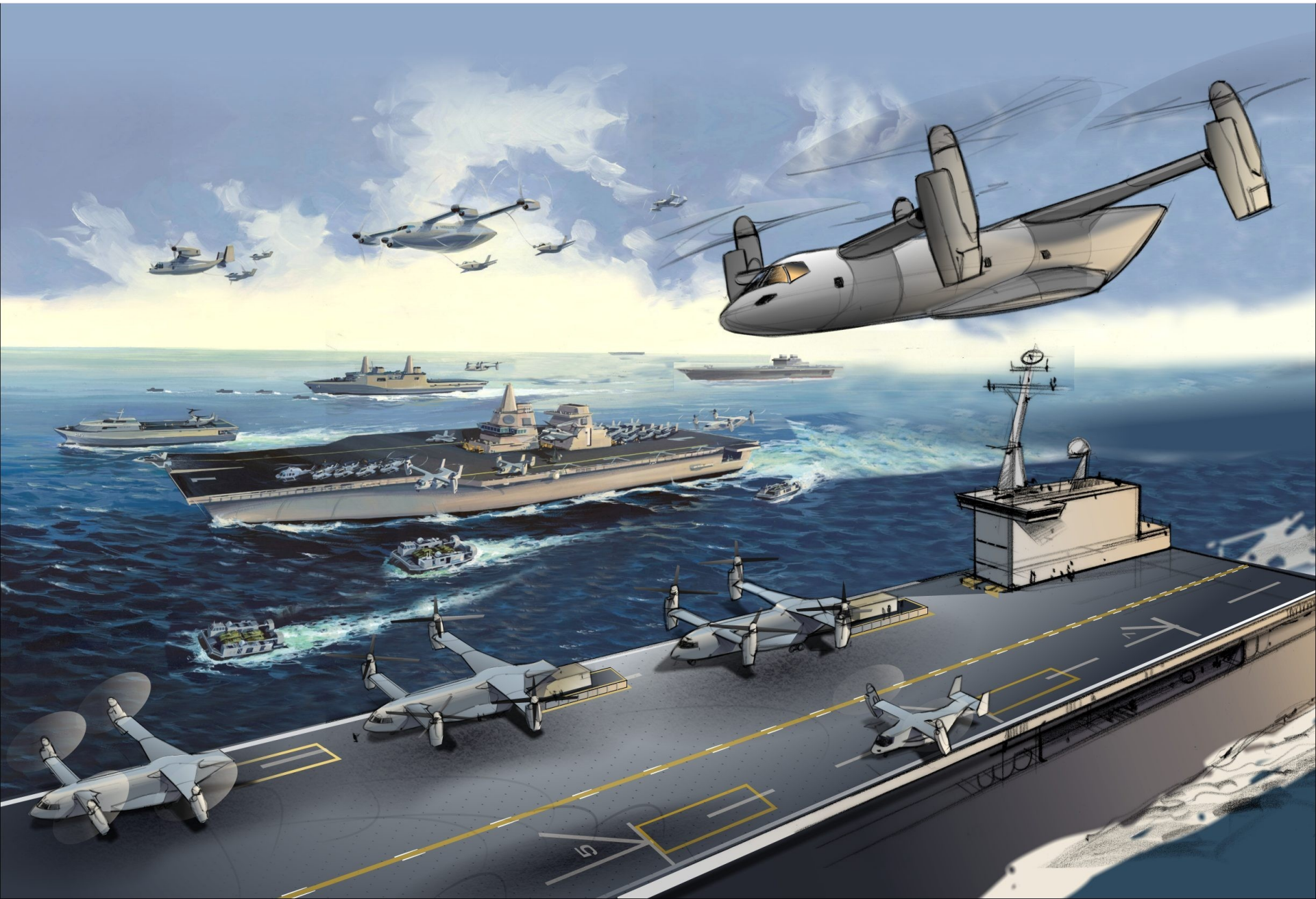
Today is on track



Transition



Tomorrow is in work





Key to Success?

Leadership

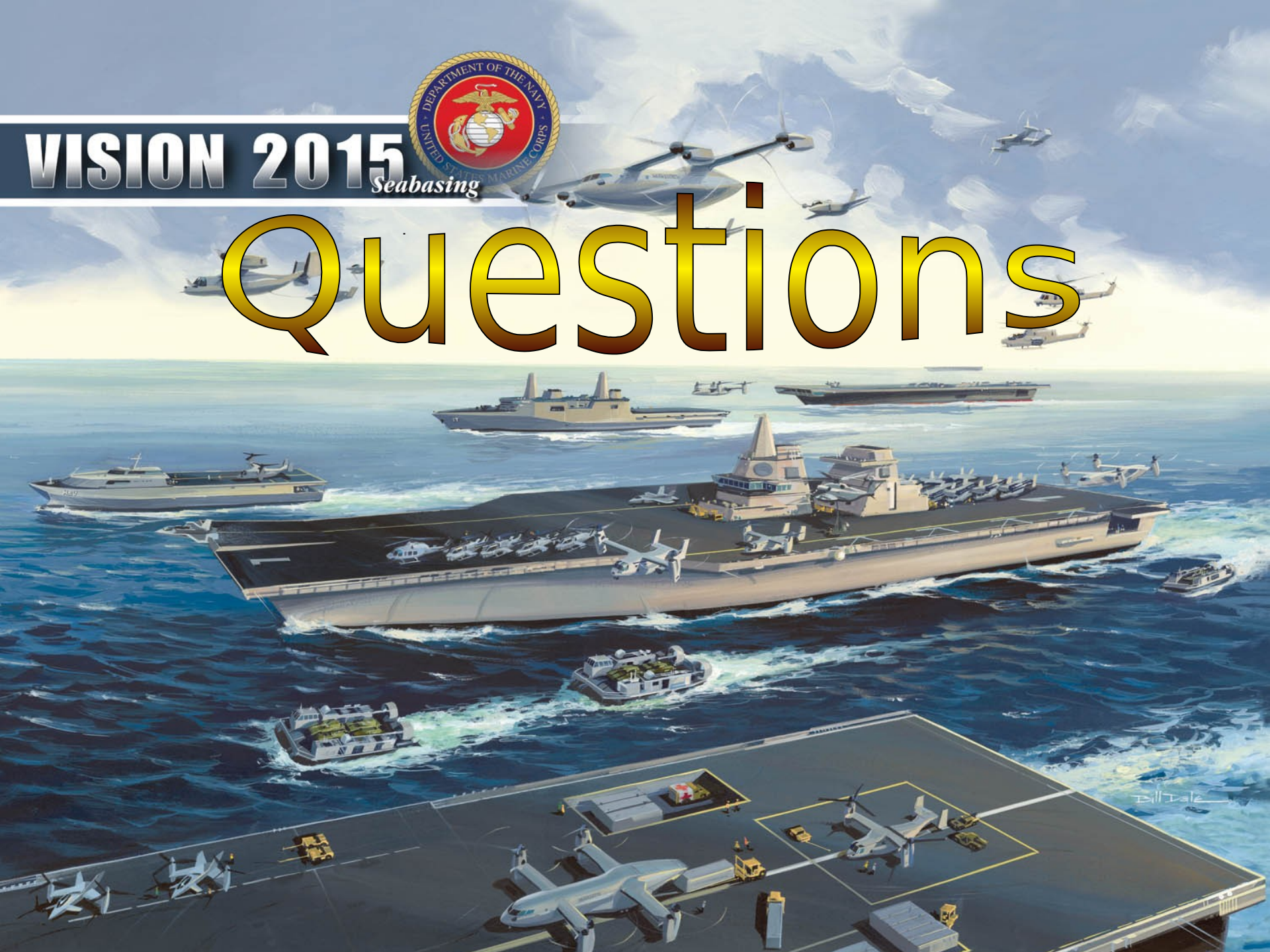


VISION 2015

Seabasing



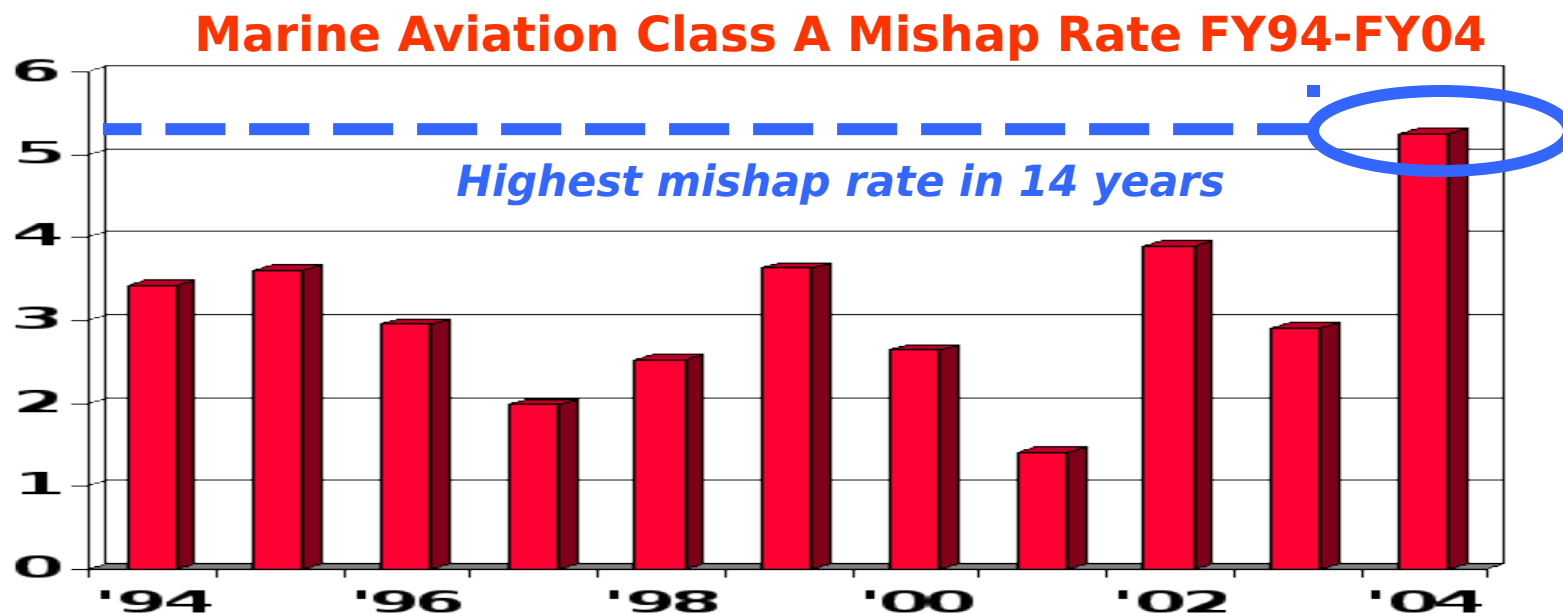
Questions





Concern: ***Safety***

- Aviation: Training / Peacetime vs. War / combat ops
- Ground mishaps - vehicles, equipment, weapons handling
- Off-duty accidents





KC-130J

- IOC: 2Q FY05
 - 2D MAW - FY05 (... GWOT)
 - 3D MAW - FY07
 - WestPac - FY11
- OPEVAL
 - First phase completed April 2004
 - Next report Jan 05
- DT & OT in progress
- FOC: FY13
- Total Force:
 - 130T: 28 (AMP)
 - 130J: 51
- Night Vision
- Survivability





MV-22 Osprey

- IOC: FY07
 - 2D MAW - FY07
- Transitions begin...
 - 3D MAW - FY09
 - 1st MAW - FY13 ?
 - 4th MAW - FY15
- Testing
 - OPEVAL Jan-May 05
 - Milestone III: Aug 05
 - VMX-22 flown >1830 hrs
- FOC: FY17
- Objective: 360





AH-1Z Cobra & UH-1Y Huey

■ **OPEVAL** Spring-Summer 2005

■ UH-1Y

- 989 flight hours*
- IOC: FY08
- FOC: FY12
- Resv: FY13
- Obj: 100

■ AH-1Z

- 1464 flight hours*
- IOC: FY11
- FOC: FY17
- Resv: FY19
- Obj: 180

■ New Build

■ Turned Exhaust *28 September 2004



Flight Operations Video

UH-1 Comparison	UH-1N	UH-1Y	Improve	
Max Gross weight, lb.	10,500	18,500	76%	
Max internal fuel, lb.	1,360	2,584	90%	
HOGE useful load, SL/hot, lb.		3,532	5,930	68%
* Util Cruise speed, 3k ft/hot, ktas	107		158	43%
* Msn rad w/4 fully ld troops, nm	63		138	113%
*Maneuverability, g's	+0.5 to +2.27	-0.5 to +2.8		*KPPs

AH-1 Comparison	AH-1W	AH-1Z	Improve	
Max Gross weight, lb.	14,750	18,500	25%	
Max internal fuel, lb.	2,100	2,768	32%	
HOGE useful load, SL/hot, lb.		3,986	5,558	39%
* Cruise speed, 3k ft/hot, ktas	131		142	8%
* Msn radius w/attack payload	58		128	121%
*Maneuverability, g's	+0.5 to +2.4	-0.5 to +2.8		*KPPs



CH-53E / Heavy Lift Replacement

- AoA: “new build” most cost-effective (vs. SLEP)
- ORD approved by MROC
- CJ&A (Sole Source)
- R&M Metrics
- Cost of Ownership
- Planned IOC: 2015
- Planned FOC: 2021



Flight Operations Video

Requirement (KPPs)

- 27K / 110
- Survivability
- Logistics footprint

Requirement (KPPs)

- Interoperability
- Mission Reliability = .89
- Sortie Generation Rate = 2.6



STOVL Joint Strike Fighter

- IOC: FY12
 - 2D MAW - FY12
 - 3D MAW - FY18
 - WestPac - FY20
- FOC: FY25
- Objective: 420





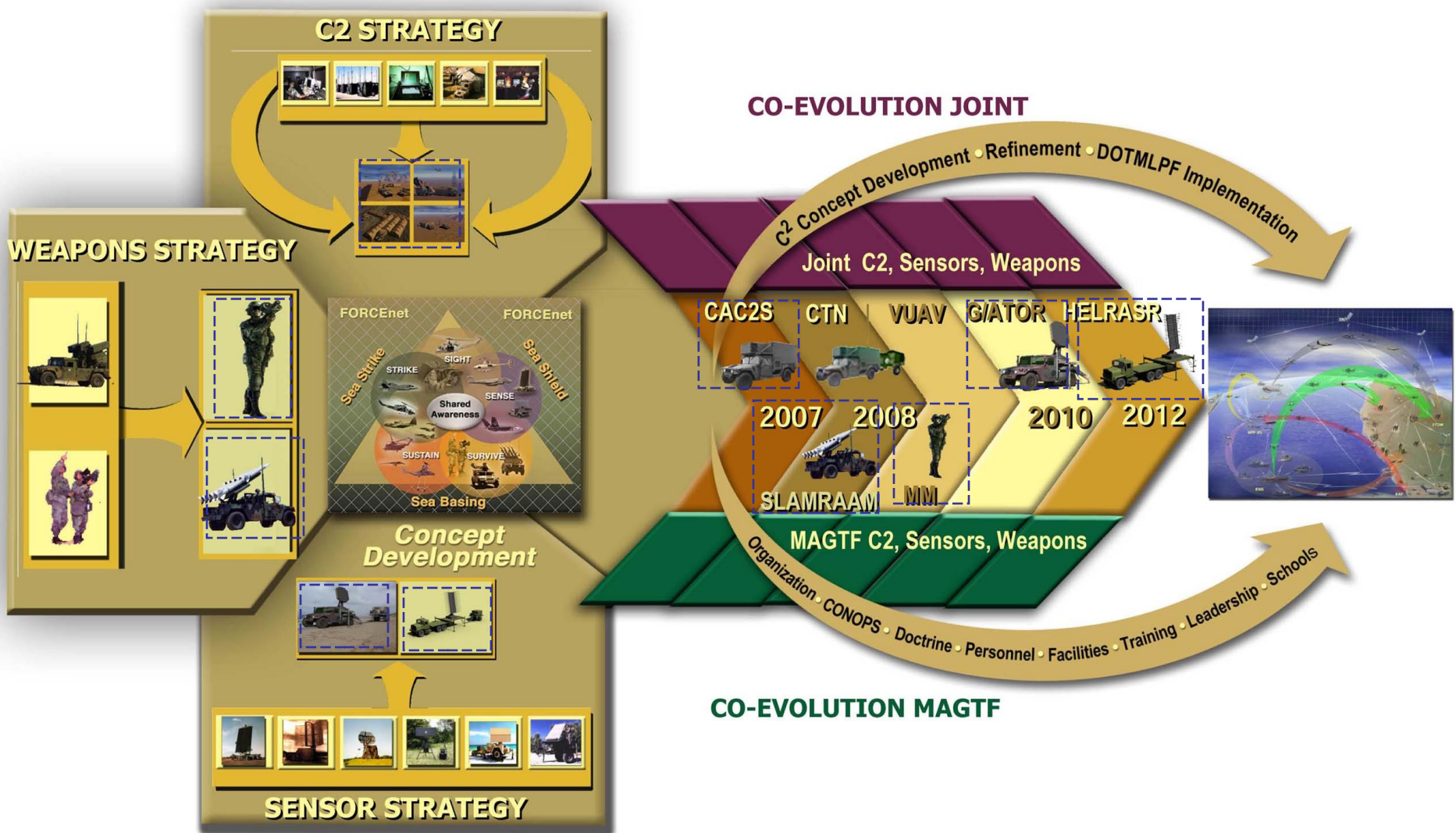
Unmanned Aerial Vehicles

- Sustain Pioneer until 2010
- Pioneers deployed ISO OIF I/II
- VTUAV requirements currently being staffed – JCIDS / CONOPS
 - 240+ NM, 200+ knots, high ceiling...
 - **200 lb payload**
 - Low Signature: IR, RCS, audible, visual
 - Transportable via V-22 / CH-53E
 - > 90% reliability
 - Links to ForceNet
 - Amphibious ship ops
 - Operated & maintained by 6-8 for 24 hrs
 - 1st VMU transition FY08 (?)
 - Fielding needed in FY09
 - Obj: 44 Aircraft, 22 Ground Control Stations
 - **Common Sensor Package**
- Partner with U.S. Coast Guard





Marine Air Command and Control System



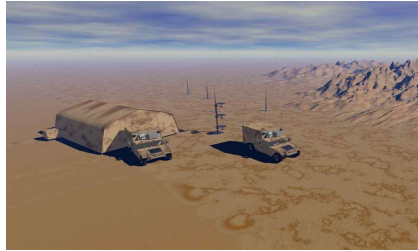


Priorities

**Zoom-in Slides
(Hyperlinked)**



Common Aviation Command and Control System



Description

- Cornerstone MACCS Program.
- Mission: Provide ACE commander the capability to effectively command, coordinate and control air operations in joint and multi-national operations
- All MACCS Functionality from a single system
- Employed in Seabased , Air Based, and Surfaced Based configurations
- Modular, Scalable, Flexible

Discussion

- Aviation Advocate #1 Green dollar priority
- Transformational C2 Capability
- Relationship to joint programs (JC2, SIAP, CID)

Schedule

- MS A - Achieved in 2000
- MS B - Achieved in 2003
- MC C - 4th Qtr 2006
- IOC - FY07
- FOC - FY10





G/ATOR



Description

- 3D, HMMWV-mounted, short/medium range radar designed to detect low observable targets i.e., CMs, ABTs, rockets, mortars, artillery, etc.
- Supports Air Defense, Air Surveillance, Air Traffic Control (ATC) & Counter-Battery/Target Acquisition
- Provides real-time radar measurement data to Tactical Air Operations Center, Common Aviation Command and Control System, Composite Tracking Network/Cooperative Engagement Capability, & Advanced Field Artillery Tactical Data System
- Satisfies warfighters' needs across BMADS spectrum

Discussion

- Aviation Advocate #2 green dollar priority
- Joint Interest, Protection FCB Jan 04
- Evolutionary Acquisition
 - I AD/AS (29 systems)
 - II GWLR (22 systems)
 - III Tactical Enhancements
 - IV ATC (12 systems)

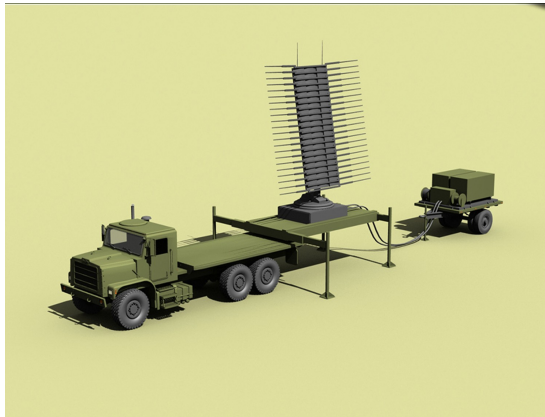
Schedule

- MS A – Achieved in 2000
- MS B – FY 2005
- MC C – FY 2009
- IOC – FY 10
- FOC – FY 16





HELRASR



Description

- The HELRASR system (AN/TPS-59(V)3 Modernization) will be a lightweight, transportable, long-range, solid state, 3-D radar; will support CAC2S, SIAP, CEC/CTN, JDN, CLAWS and Sensor Netting to provide simultaneous Theater Ballistic Missile (TBM) data cues and air surveillance for Air Breathing Targets (ABT's)
- Maintains performance features of the AN/TPS-59(V)3 radar while reducing the footprint and improving mobility

Discussion

- Aviation advocate number four (4) green dollar priority
- HELRASR is a one-for-one replacement for the AN/TPS-59(V)3
- MAGTF'S only long-range air surveillance capability
- Battlespace Awareness
- Airspace management, Aircraft Control, Safety of Flight

Schedule

- MS A - Achieved in Mar 2003
- MS B - 3rd Qtr 2008
- MS C - 4th Qtr 2012
- IOC - FY 13
- FOC - FY 18
- AO=11 systems





SLAMRAAM



Description

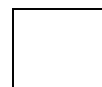
- Rapidly deployable, all-weather, standoff, air defense capability
- Cruise missiles, fixed wing and rotary wing aircraft and Unmanned Aerial Vehicles (UAV) well beyond Stinger range.
- Complement existing Short Range Air Defense (SHORAD) systems including Man Portable Air Defense Systems (MANPADS).
 - Block I System - CLAWS Launcher, ADCP-EP, Sentinel
 - Block II System - Joint Launcher, IFCS(CAC2S), MRRS

Discussion

- Aviation Advocate number (3) green dollar priority
- Adopted Joint Acquisition Strategy with US Army SLAMRAAM Program on 14 Nov 03
 - Common Launcher
 - Common Missile

Schedule

- Block I IOC, 2nd Qtr FY06 (4 launchers. 1 ADCP-EP, 2 Sentinel)
- Block II IOC, 1st Qtr FY10 (4 launchers, 2 IFCS, MRRS)
FOC FY15 (Block I upgrades complete)
AAO 65 Launchers





Multi-Mission MANPAD



Description

- Slew-to-Cue Capability
- Day/Night Surveillance via FLIR
- Networked Communications via Integrated Network Radio for Enhanced Situation Awareness
- Laser Designation for other Joint Munitions
- Ground-to-Ground Capability against lightly Armored Ground Targets and other asymmetric threats

Discussion

- ◆ Cornerstone of LAAD Transformation
- ◆ Fully integrated gripstock for Multi-Mission Defense Weapon System
- ◆ Lethal Against UAVs, CMs, RW, FW, & Light Ground Targets
- ◆ Network cueing capability for enhanced effectiveness against aerial threats
- ◆ Multi-mission launcher fires current Stinger Block I and RMP missiles
- ◆ Ideally suited for Expeditionary, distributed, SOF operations in complex

Schedule

- Fielding Targeted for FY 09



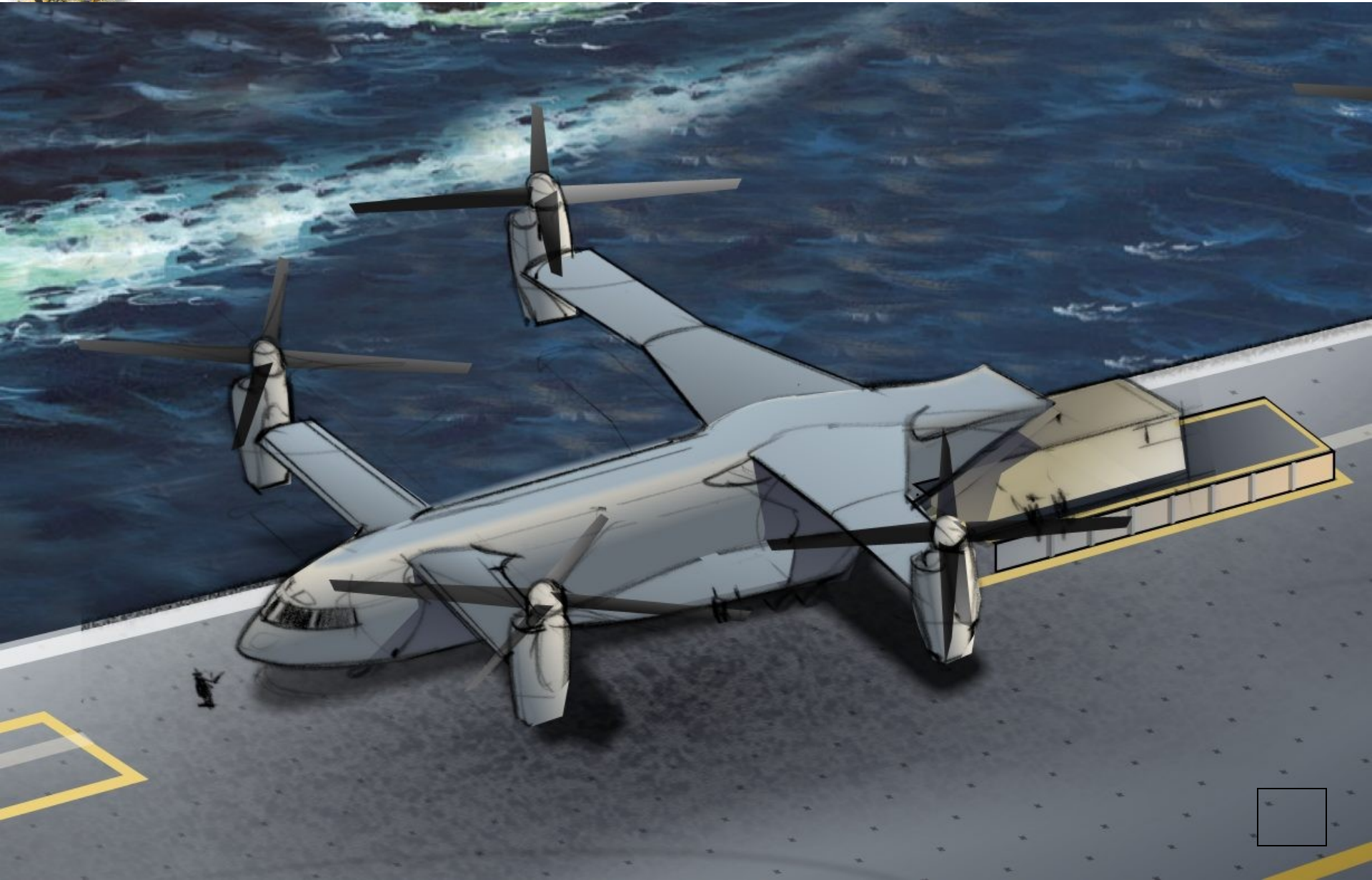


Sea Base: LHA(R) Dual Tram



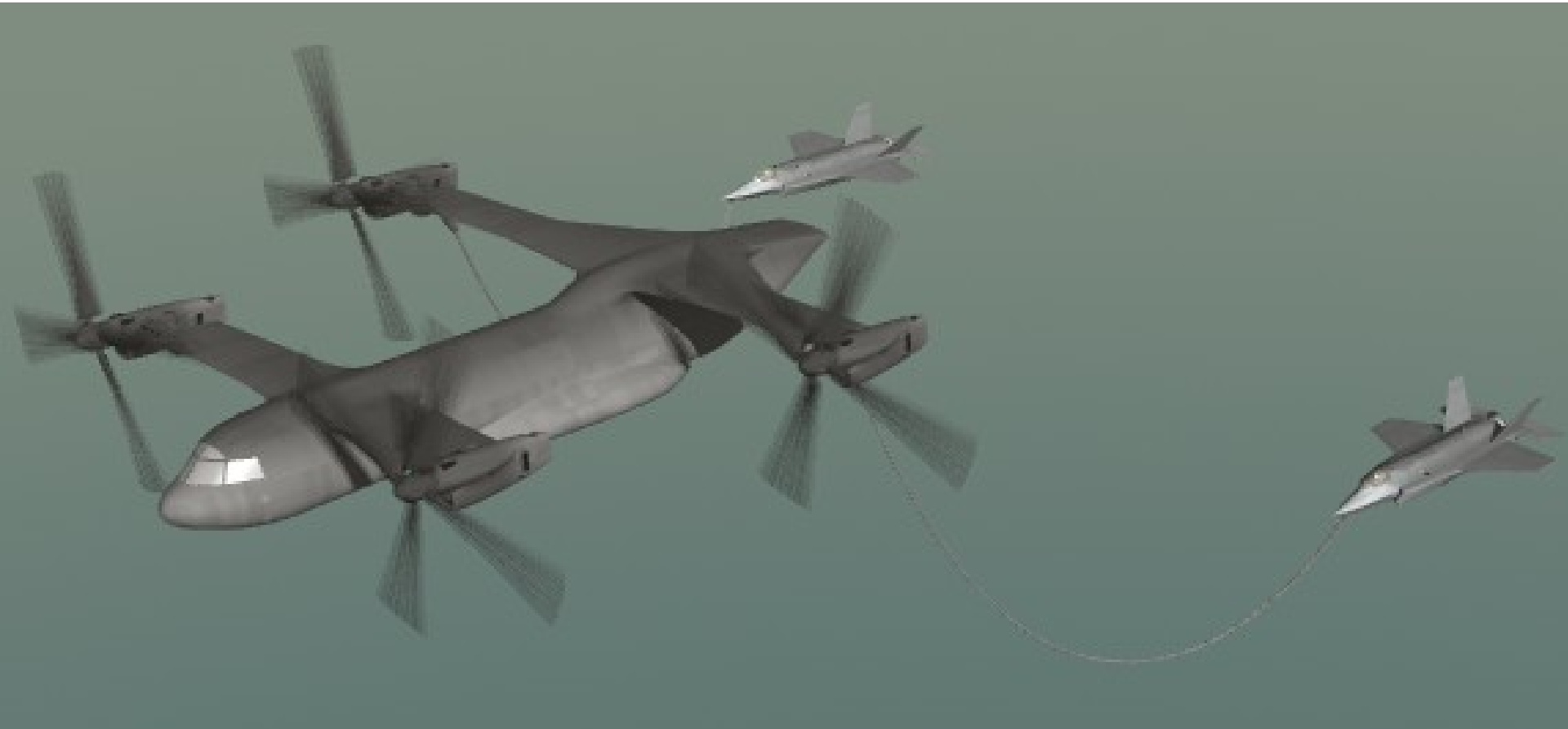


Sea Base: Selective Offload from MPF-F



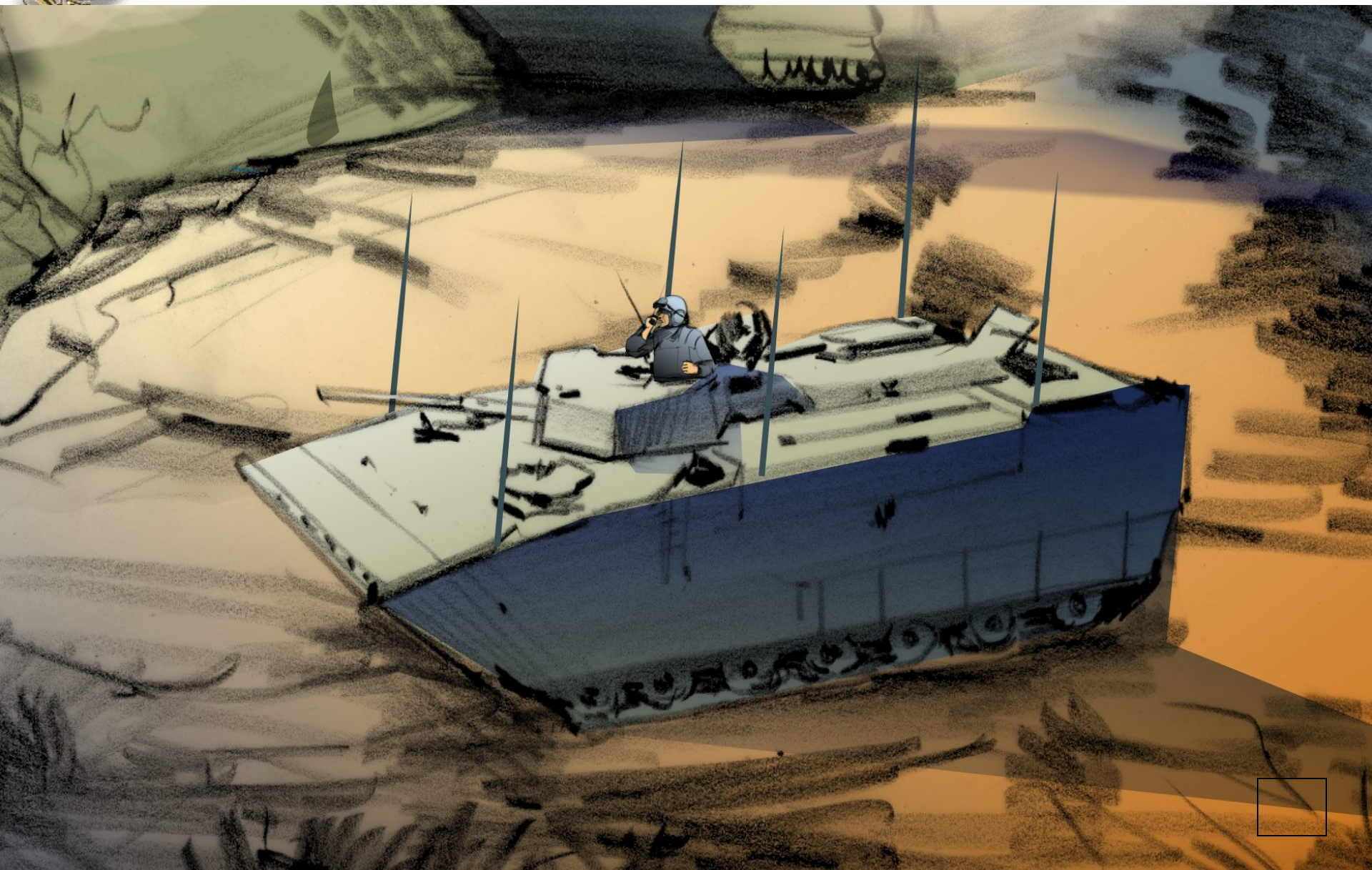


Sea Base: Aerial Refuel of JSFs



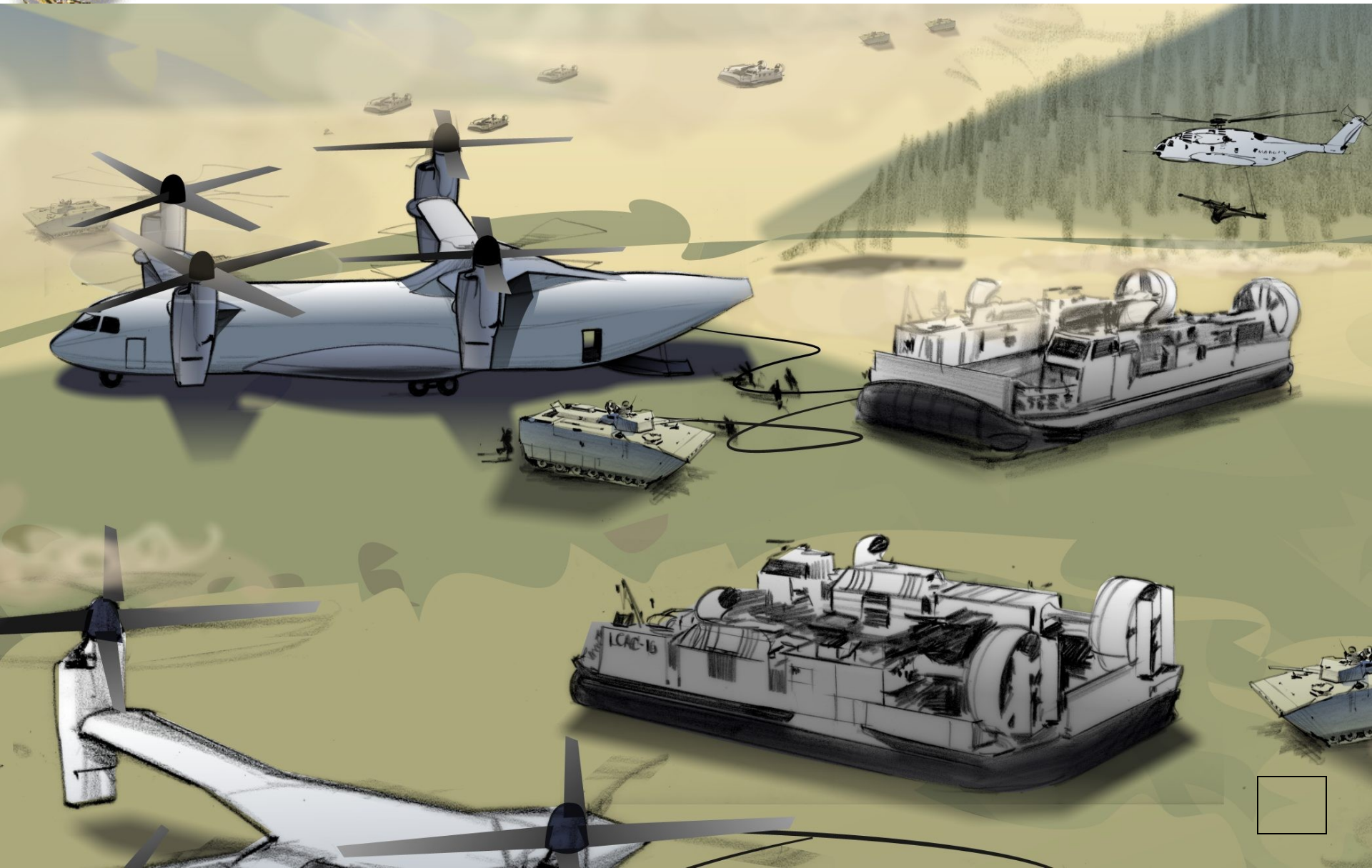


Across the Beach: EFV-based FAC controlling AH-1Ws



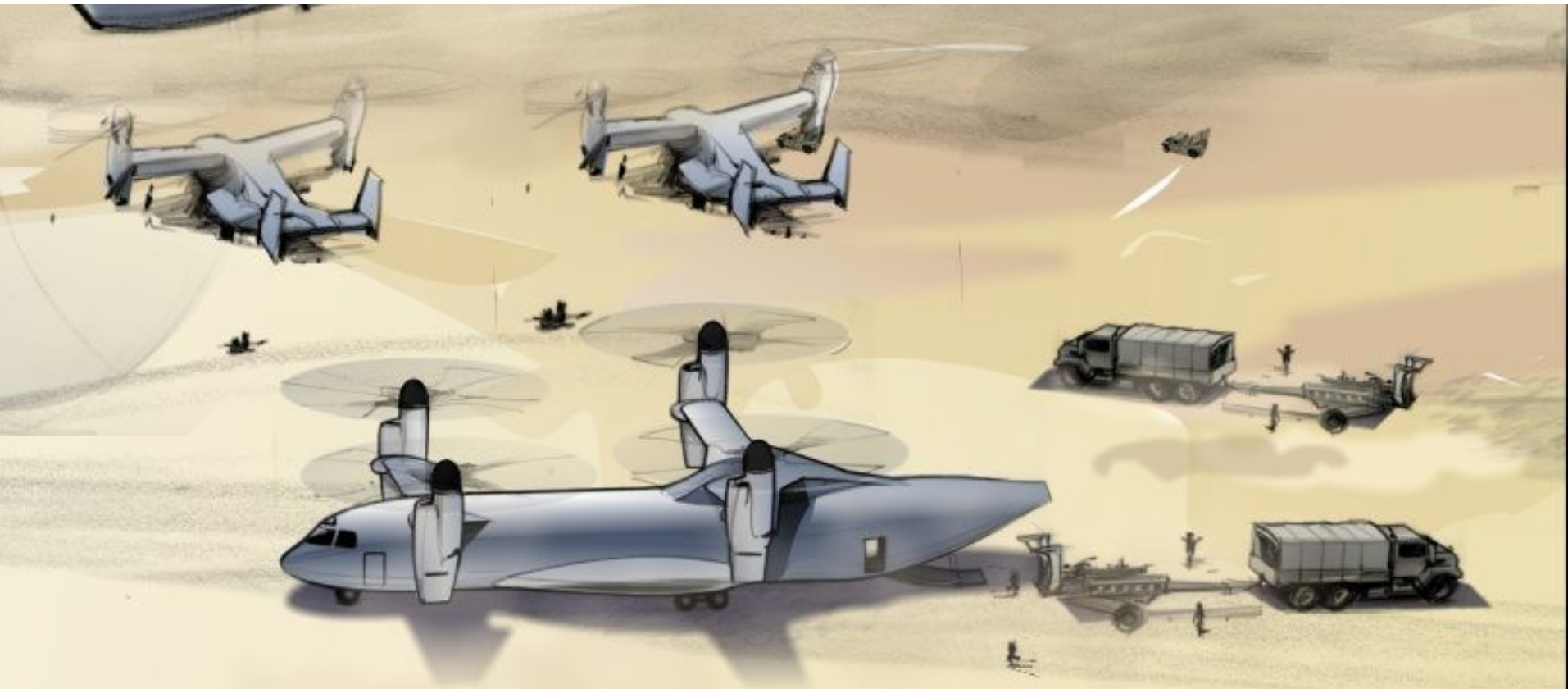


Across the Beach: Ground FARP



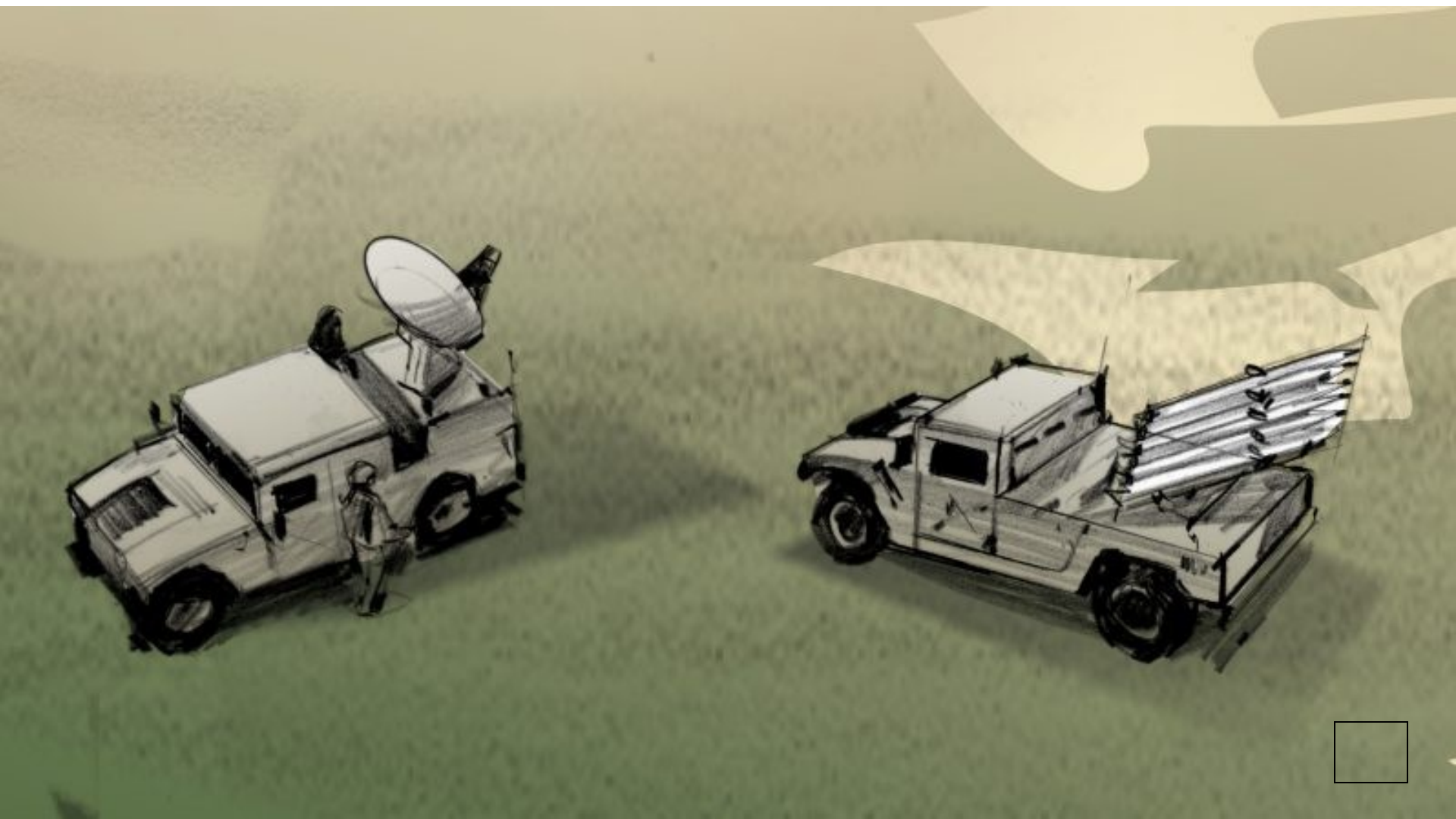


200 nm Inland: LW-155 & MTRV offload





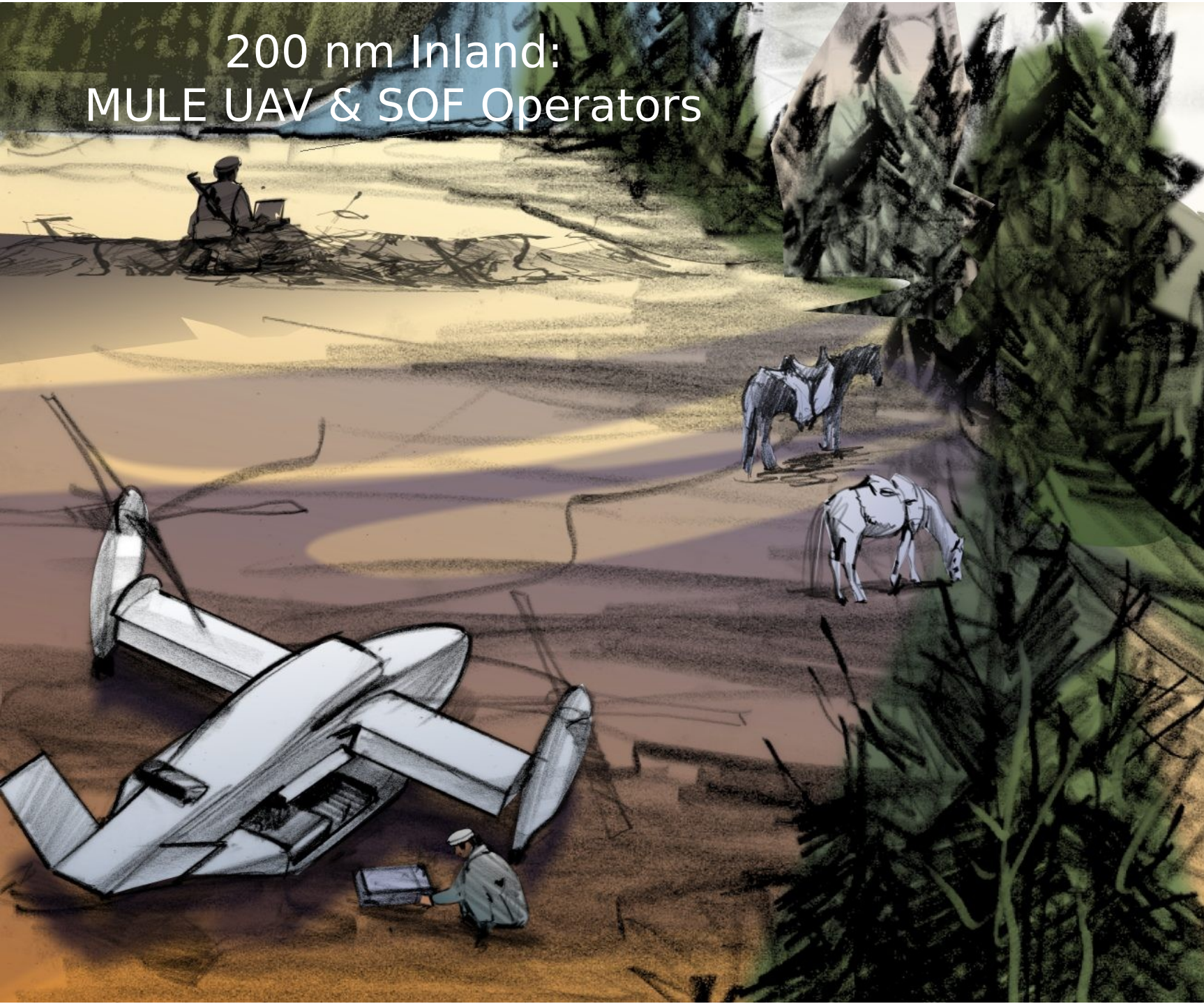
200 nm Inland: CLAWS



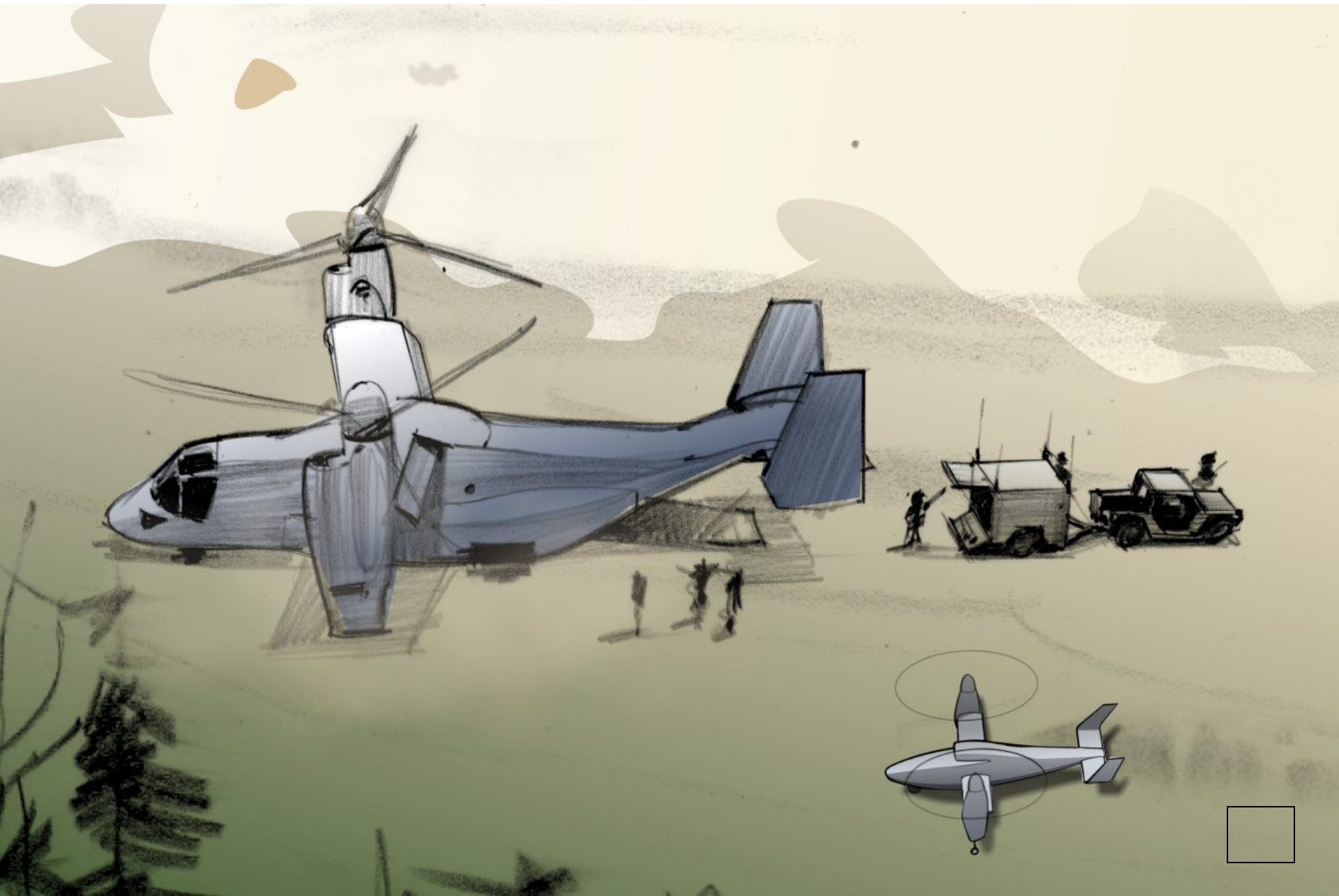
200 nm Inland: Coordinated Strike



200 nm Inland: MULE UAV & SOF Operators



200 nm Inland: V-22, VUAV, ITV and GCS



200 nm Inland: QTR offload of MEFFVs

